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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,850	09/29/2005	Thomas Durbaum	DE 020187	6192
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EXAMINER				
PHAM, EMILY P				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/521,850

Applicant(s)

DURBAUM ET AL.

Examiner

EMILY PHAM

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/27/2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 12/27/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/CDC)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-9, and 12 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Brkovic (U.S. Patent 5,940,287).

Regarding independent claim 1: Brkovic (**FIG 1**) discloses the structure to perform method for controlling the transient response of a power converter powering a load (**150**), said power converter comprising a power switch (**110**), a synchronous rectifier (**item 120**) and a capacitor (**item 140**) coupled between an input and an output of the power converter, said method comprising the step of disabling said synchronous rectifier (**column 4, lines 62-67**) in response to a signal indicative of a change of said load (**column 4, lines 62-67**), characterized by providing said signal based on a current representing said change of load (**column 4, lines 62-67**).

Regarding depending claim 2: Brkovic (**FIG 1**) discloses the structure to perform

the method as claimed in claim 1, characterized in that said load **(150)** communicates information about its needed current to provide said signal **(160, Isr, and Io)**.

Regarding depending claim 3: Brkovic (**FIG 1**) discloses the structure to perform the method as claimed in claim 1, characterized in that said signal is provided by detecting a current **(Io)** through said load **(150)**.

Regarding depending claim 4: Brkovic (**FIG 1**) discloses the structure to perform the method as claimed in claim 1, characterized in that said signal is provided by detecting a current **(Io)**.

Regarding independent claim 7: Brkovic (**FIG 1**) discloses transient response controller **(160)** to be used in a power converter **(100)** powering a load **(150)**, said power converter comprising a power switch **(110)**, a synchronous rectifier **(120)**, and a capacitor **(140)** coupled between an input and an output thereof, said transient response controller being coupled at least to said synchronous rectifier to disable said synchronous rectifier in response to a signal indicative of a change of said load **(160, 120, 150)**, characterized in that said transient response controller is coupled to means for providing said signal based on a current representing the change of load **(FIG 1, items 160, 150)**.

Regarding independent claim 8: Brkovic (**FIG 1**) discloses a power converter **(100)** powering a load **(150)**, comprising a power switch **(110)**, a synchronous rectifier **(120)** and a capacitor **(140)** coupled between an input and an output of the power converter, and a transient response controller coupled to at least said synchronous rectifier, said transient response controller disabling said synchronous rectifier in

response to a signal indicative of a change of said load, by means for providing said signal based on a current representing said change of load, said means for providing said signal being coupled to said transient response controller.

Regarding dependent claim 9: Brkovic (**FIG 1**) discloses the power converter as claimed in claim 8, characterized in that said means for providing said signal is a controller of said load communicating the power consumption of said load to said transient response controller (**column 4, lines 27 – column 5, line 19**).

Regarding dependent claim 12: Brkovic (**FIG 1**) discloses the power converter as claimed in any of claims 8 to 11, characterized in that said transient response controller is connected to said power switch to switch off said power switch in response to said signal (**column 4, lines 27 – column 5, line 19**).

3. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by Tateishi (U.S. Patent 6,642,696). Tateishi discloses a method for detecting the transient response of a power converter powering a load, characterized by filtering a voltage across a capacitor by a first RC element, said first RC element satisfying

$C1 \times R1 \leq \frac{Lc}{Rc}$ (**column 13, line 10: $C31 \times R31 = L1/R1$**)

wherein

Rc = parasitic serial resistance of capacitor

Lc = parasitic serial inductance of capacitor

$R1$ = resistance of first RC element, and

$C1$ = capacitance of first RC element:

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6, 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brkovic (U.S. Patent 5,940,287) as applied to claim 1 above, in view of Zhang (U.S. Patent 6,232,755).

Regarding dependent claim 6: Brkovic discloses the claimed invention except for the method, characterized that said signal based on a current is compared to at least one threshold value. Zhang teaches the method for controlling transient response, characterized that said signal based on a current is compared to at least one threshold value (**column 6, lines 3-6**).

Regarding dependent claim 10: Brkovic discloses the claimed invention except for the power converter, characterized in that said means for providing said signal comprises means for detecting the current through said load and means for comparing said current with at least one threshold value. Zhang teaches the power converter, characterized in that said means for providing said signal comprises means for detecting the current through said load and means for comparing said current with at least one threshold value (**column 6, lines 3-6**).

Regarding dependent claim 11: Brkovic discloses the claimed invention except for the power converter, characterized in that said means for providing said signal comprises means for detecting the current through said capacitor by a voltage drop across said capacitor and means for comparing said voltage drop with at least one threshold value. Zhang teaches the power converter, characterized in that said means for providing said signal comprises means for detecting the current through said capacitor by a voltage drop across said capacitor and means for comparing said voltage drop with at least one threshold value **(column 6, lines 3-6)**.

Regarding dependent claim 13: Brkovic discloses the claimed invention except for the use of power converter for powering high speed integrated circuits. Zhang teaches the use of power converter as claimed for powering high speed integrated circuits **(column 2, lines 14-16)**.

Brkovic and Zhang disclose the method for controlling transient response in a switching voltage regulator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the transient response network of Brkovic with regulator taught by Zhang to adjust timing in response to load transient by performing energizing and de-energizing at a frequency that deviates from the predefined frequency to compensate for the transient.

Response to Arguments

6. Applicant's arguments filed 12/27/2007 have been fully considered but they are not persuasive.

Arguments with respect to claims 1, 7, and 8 on pages 7-9 of Remark are not persuade because Brkovic disclose that signal (**lsr**) is provided based on a current representing change of load (**lsr and lload drop at the same time and same rate; col. 5, lines 1-19**).

Applicant's arguments with respect to claim 5 on page 7 of Remark have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMILY PHAM whose telephone number is (571)270-3046. The examiner can normally be reached on Mon-Thu (7:00AM - 6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272 - 2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 2008

/Jessica Han/
Primary Examiner, Art Unit 2838

/E. P./
Examiner, Art Unit 2838